Your excellent helper in cable test!

SHENZHEN NOYAFA ELECTRONIC CO.,LTD

NOYAFA®

Your excellent helper in cable test!

MODEL:NF-868

INSTRUCTION MANUAL

LCD Cable Length Tester

ORIGINAL AUTHENTIC

Patented products, Counterfeiting not allowed!

REV1.0

Please read and learn safety instructions before use or maintain the equipment

- Keep the testers in right place to avoid hurt with the sharp probe.
- Never put the equipment in the place with much dust, humidity and high temperature (over 40℃).
- Please use battery according to the specification; otherwise, it may result in damage to equipment.
- Please never dismount the equipment arbitrarily. The mainten -ance and care shall be conducted by professional personnel.
- The tester will shut off automatically if it does not work for 15 minutes in succession.
- Please take out the battery in launcher and receiver if the equipment is not used for a long time so as to prevent that the battery liquid is leaked in future.
- Never use the equipment to detect power cord with electricity (such as power supply circuit of 220V), other wise, it may result in damage to equipment and personal injury.
- Never conduct related operation of communication line in thunderstorm weather so as to prevent lightning stroke and impact on personal safety.

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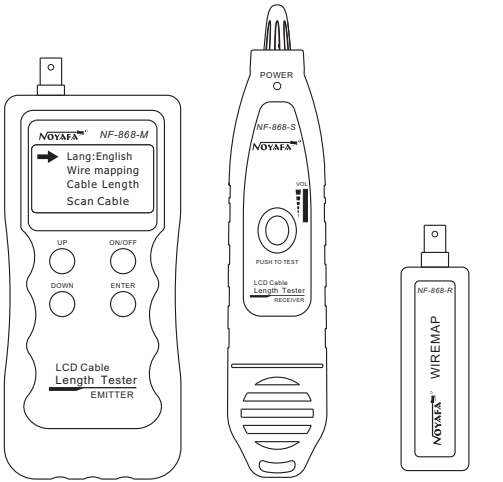
Your excellent helper in cable test!

Overview

NF-868 Series are newly developed by our company which are capable of avoiding current inteference . The equipment is composed of three parts: main tester (NF-868-M), receiver (NF-868-S) and remote identifier (NF-868-R).It has couples of circuit state testing functions including length test, cable line finding, line-to-line, crosstalk and breaking point, serving as a practical tool for low voltage system installation and maintenance technicians of communication circuits and comprehensive wiring circuits. It is widely used in the fields like telephone system, computer networks and other metal lead circuits.



Main tester (NF-868-M) | Receiver (NF-868-S) | Remote identifier (NF-868-R)

Main functions

- Capable to test open, short , cross connection, reverse, pairing connection and broken wire positioning.
- To perform crosstalk test on network cable to solve the potential problem of slow speed.
- To quickly find the target wire or cable among kinds of wires.
- Measure length of network cable, coaxial cable,telephone cable and USB cable up to 2000m, no need of remote unit.
- To make a accurate determination of short circuit position .
- To trace cable on exchanger or Router without current inteference.
- Low voltage prompt function is available.
- Remote unit with tone when checking wiremap
- Functions of storage and memory.
- Automatic delay power on-off and backlight function.
- Lighting lamp enables to use in a dark environment.
- Single chip software watchdog design runs reliably.

Technical parameters

(1). Overall dimensions

Main tester: 185X80X32mm; Receiver: 218X46X29mm
Remote identifier: 107X30X24mm.

(2). Display

Dot matrix 128X64 (Effective visible area 56X40mm).

(3). Power supply

Main tester: 9V battery.
Receiver: 9V battery.

(4).Testing cable types

STP/UTP 5E, 6E network cable, telephone cable, coaxial cable, USB cable and common metal wires connected with alligator clip.

(5).Detecting cable types
STP/UTP 5E, 6E network cable, telephone cable, coaxial cable, USB cable and common metal wires connected with alligator clip.

(6).Operating environment temperature/humidity
-10℃ ~ +60℃ /20% ~ 70%;

(7).Testing device interface
Main unit: RJ45 (M), RJ45 (S), loop interface, RJ11, BNC connector, USB B-type female interface;
Remote identifier: RJ45, RJ11, BNC connector, USB A-type female interface.

(8).Length measurement
Range: 1-2000m;
Calibration precision: 2% (+/-0.5m, or +/-1.5 feet); (calibration; cable >10m) measurement precision: 3% ((+/-0.5m, or +/-1.5 feet); (AMP, CAT5E, 6E cable material)
Display unit: meter, inch, yard.

(9).Length calibration, storage and data load
User can set a length value at a known length, store the value in the system,which can be used for future choice. and the calibration length should be over 10m.

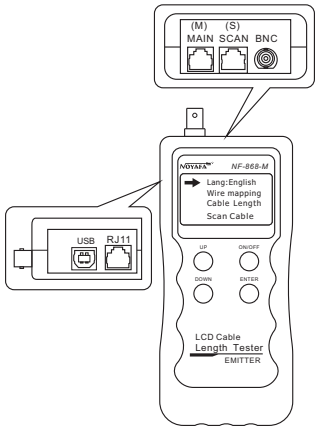
(10). Line sequence and cable failure positioning
Open, short, reverse , cross, crosstalk, etc.

(11).NF-868W includes 8 remote units with ID1-ID8.

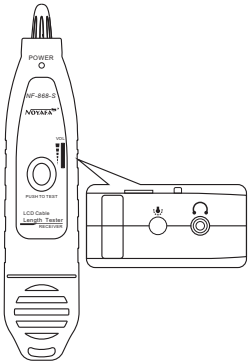
(12). Line tracing function (Note: NF-868A can't trace cable)
Locate targeted cable among lots of cables

(13). Language & Automatic power-off
Users can choose English or Chinese for operation.
Users can choose time to turn off the tester automatically (15mins, 30mins,45mins ,60mins)

Product interface and key introduction



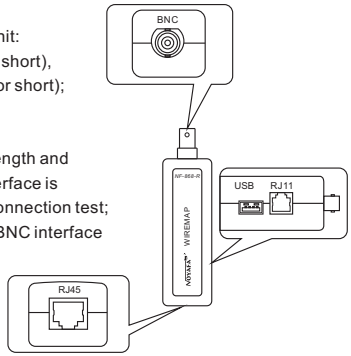
Main tester (NF-868-M)



Receiver (NF-868-S)

Main unit port instructions

(1). Two RJ 45 interfaces on the main unit: one of them is "MAIN" interface ("M" for short), and the other is "SCAN" interface ("S" for short); RJ11 interface, USB interface and BNC interface
(2). M interface is used for measuring length and others, but not for cable tracing; "S" interface is used for cable tracing test and "local" connection test;
(3). RJ11 interface, USB interface and BNC interface on the main unit are used for line-to-line, length testing and line tracing.



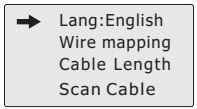
Remote identifier (NF-868-R)

Product operation method

Bootscreen

Synchronous self test (- - - - - -self test dynamically displayed in the line from left to right)

5 seconds later, the following main interface is displayed:

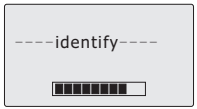


There are nine functional options in the main menu interface

(1) Language— English or Chinese.
(2).Wire mapping --- Connection and disconnection test: to test connection of M, S R end-end cable and perform positioning of the failure.
(3).Cable Length---Pairing and length measurement: verify cable length, open circuit distance and pairing, crosstalk.
(4).Scan cable---to find target cable among lots of network cables, telephone cables, USB cables, coaxial cables and other kinds of wires.
(5).Type--- Pair / Tel / USB / COAX / BNC Cable.
(6).Unit---Meter / Feet / Yards.
(7).Calibrate— Seven calibration coefficient can be stored in it. User can calibrate network/ telephone/ USB/ Coax cables.
(8) Data loading---Select the calibration coefficients stored in system.
(9) Auto power off— set the time for power off.

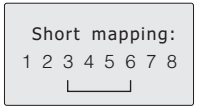
a.Cable line-to-line test:

Taking network test as an example: after entering connection test function, press “ENTER” key to check wiremap. At this time, the following interface is shown indicating test is in process:



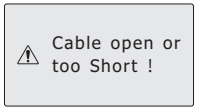
Test result 1: Short circuit

If there is short circuit with the cable and terminal, it will show as below:
(Short circuit with 3 and 6)



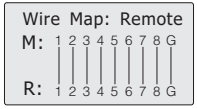
At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.
Please do not perform test again until short circuit problem solved.

Test result 2: if the far end of the cable to be tested is not plugged in remote adapter (R) or cable is not plugged into the local port (S), the following interface is shown:



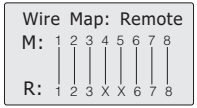
Test result 3:correct connection

the following interface is shown:



“M” stands for Master unit. “R” stands for remote unit.

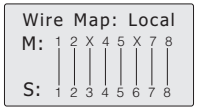
Test result 4: In case of open circuit existing on far end of the cable, the following interface is shown:



In the figure, “X” shown in “4” and “5” pin position in “R” line, indicates there is open circuit in “4” and “5” pin of the remote pin.

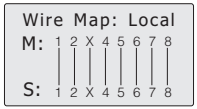
Note: Because network cable is made of pair cores, if there is open circuit, it will show faults in pairs, just as above "4" &" 5". it means either "4" pin or "5" pin exsits an open circuit, or both "4" and "5" exsit an open circuit.

Test result 5: In case of open circuit existing at the near end of the cable when testing only with main tester, the following interface is shown:



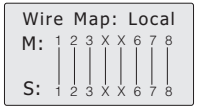
In the figure, “X” shown in “3” and “6” pin position in “M” line, indicates there is open circuit in “3” and “6” pin of the near pin.

Test result 6: In case of open circuit existing at the middle part of the cable when testing only with main tester, the following interface is shown:



In the figure, “X” shown in “3” pin position in “M” and “S” line, indicates there is open circuit in “3” pin of the middle part of the cable. Perform"PAIR&LENGTH" to locate the exact fault point. Refer to the related chapter below.

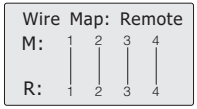
Test result 7: In case of open circuit existing in the cable when testing with main tester and remote unit together, the following interface is shown:



In the figure, “X” shown in “4” & “5” pin in “M” & “R” line, It has two possible results. Both “4” and “5” pin are open curcuited. Or , either “4” or “5” pin is open.
Note: When checking wiremap with main tester and remote unit together, the cable is tested in pair. Thus, if there is one pin is open , it will show in pair as above.
To test which pin is open, users can check wiremap only with main tester like Example 4,Example 5 and Example 6 do.

Test result8: USB cable line sequence test

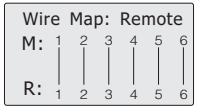
Before checking wiremap of USB cable, users need to choose "USB(4)" in "Type" . and then return to main menu to check its wiremap. If the testing cable is in good connection, The following interface will be shown:



At this time, press any key to return to the main menu, and then press“ENTER” key for re-test.

Test result 9: 6-core telephone cable line sequence test

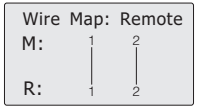
efore checking wiremap of telephone cable, users need to choose "TEL(6)" in "Type" . and then return to main menu to check its wiremap. If the testing cable is in good connection, it will displays as follows:



At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.

Test result 10: BNC coaxial cable line sequence test

Before checking wiremap of BNC cable, users need to choose "BNC(2)" in "Type" . and then return to main menu to check its wiremap. If the testing cable is in good connection, it will displays as follows:



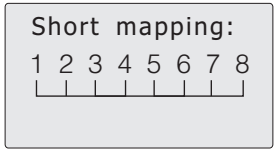
At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.

Remote unit with tone when checking wiremap

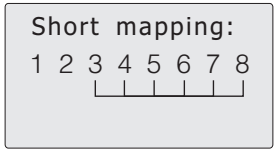
When use remote unit to check wiremap, users can distingush the test result firstly via tones. When the cable is normal, the remote unit will generate "beep" long and slowly. When the cable is abnormal, the the remote unit will generate "beep" short and quickly.

Special use: In case of exchanger power-on, the main unit can test line sequence of the connecting cables

Take network cable as an example: one end of the cable is connected with "MAIN" interface of the main unit, and other end is connected with exchanger interface. And direct connection test can be performed. If the exchanger interface tested is reliably connected, the following interfaces shown (exchanger interface is 8-core):

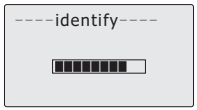


In case of open circuit with line 1 and 2 of the exchanger tested, the following interface is shown (exchanger interface is 8-core):



b.Cable length test:(Test length only with the main tester, don't connect cable into remote unit.)

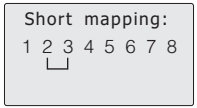
Firstly insert one end of the testing cable into "M" port in the main tester. When entering "Pair&Length" testing function to check the length.
At this time, the following interface is shown:



Note: Due to different technical parameters with different branded cables, users are recommended to use dynamic calibration function of the equipment before measuring length (Refer to the related chapter for more details.).

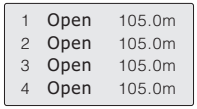
Test result 1: Short circuit

If there is short circuit with the cable and terminal, the following interface is shown (Short circuit with 2 and 3)

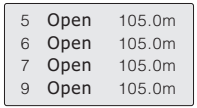


At this time, press any key to return to the main menu, and then press "ENTER" key to other functions.
Please do not perform test again until short circuit problem solved.

Test result 2: In case of normal pairing and length test, the following interface is shown:

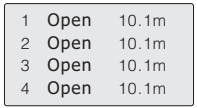


Thus , the cable is almost 105m . Only one end of cable connect with main tester, the other end needs no connection, so it show "Open" in the picture
At this time, press any key to return to the main menu, and then press "ENTER" key for re-test..



Test result 3: USB cable length test

(1).Insert one end of the USB cable to be tested into "USB" port of the main tester, the other end needs no connetion, select "USB(4)" Type, return to the main menu, and select length test, and then press "ENTER" key to perform length test with the equipment, the following interface will be shown:



It indicates that length of USB cable is 10.1m. At this time, press any key to return to the main menu, and then press "ENTER" key for other testing.

Test result 4: RJ11(TEL) cable length test

(1).Insert one end of the RJ11 cable to be tested into “RJ11” port of the main tester, the other end needs no connection. select “Tel(6)” mode, return to the main menu, and select length test, and then press “ENTER” key to perform length test with the equipment, the following interface will be shown:

1	Open	10.1m
2	Open	10.0m
3	Open	10.1m
4	Open	10.1m

And then press “UP” or “DOWN” key, the following interface will further be shown:

5	Open	10.1m
6	Open	10.1m

It indicates that length of telephone cable is 10.1m.

Test result 5: BNC cable length test

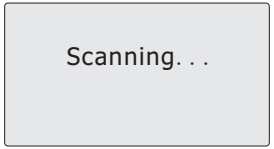
If to insert one end of the BNC cable to be tested into “BNC” port of the main tester, the other end is an open circuit, select “BNC(2)” mode, return to the main menu, and select length test, and then press “ENTER” key to perform length test with the equipment, the following interface will be shown:

1	Open	10.1m
2	Open	10.1m

It indicates that length of BNC cable is 10.1m. At this time, press any key to return to the main menu, and then press “ENTER” key for re-test.

c. Cable tracing test:

After powering on the main tester and entering main test menu, press “UP”, “DOWN” key to move “➡” cursor to cable scan, and then press“ENTER” key to find the line. The following interface will be shown:



Connect the cable to be found with the corresponding RJ45(Scan) port of the emitter, (RJ11,USB or BNC). Take network line finding as an example: connect the network cable to be found with Rj45 port, move “➡” cursor to cable scan, and press “ENTER” key to perform line finding test as shown in the figure below:

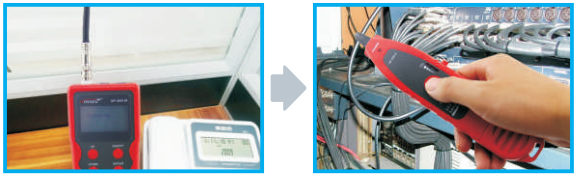
The usage of receiver

Install 9V battery, push the test key, get close to the cables with probe.you can hear “beep”, the power led flashes. When the probe finds the targeted cable,the voice will be loudest, and the led light will be brightest.

1.Tracing cable (RJ45/RJ11 Cable) which is connected to switch or router.

Insert the cable into port RJ11/ RJ45 (S), Press the testing key of receiver, “Power” will be lighted, then hold the receiver close to the cables, when the probe gets close to the targeted one, you can hear clear and loud “beep,beep, beep” .
(Note: telephone cable into RJ11, Lan cable into port RJ45(S))

2.Tracing Coax cable

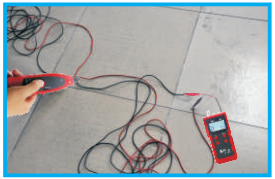


Insert the cable into port BNC, Press the testing key of receiver, “Power” will be lighted, then hold the receiver close to the cables, when the probe gets close to the targeted one, you can hear clear and loud “beep,beep, beep” .
(Note: turning down the voice slowly help trace cable easiler.)

3.Locate the short or breakge point (eg: metal line)

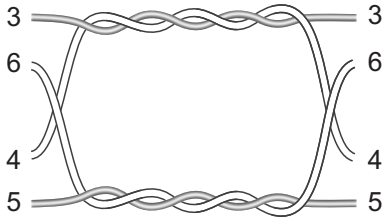
Connect the metal line with the cable clips, press the testing key of receiver, hold the receiver close to the cables, “beep, beep,beep” will generate, but when the probe targets the breakge point, “beep,beep,beep” stops, which indicates that is where the breakage is.

Note: 1) the metal line is de-energized.
2) Turn up the voice, which helps locate breakge easily.
3) Two cables must be connected together, if only one cable, the black clip has to be grounded.



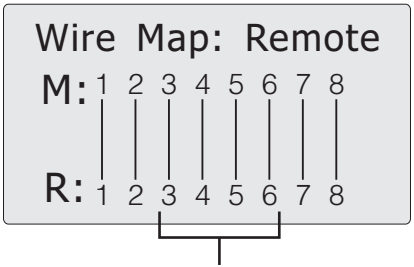
d. Crosstalk test

As shown the figure below: it shows 3, 6 and 4, 5 with crosstalk. The line pair with crosstalk will flash to indicate failure. In the line pair with crosstalk, end-to-end connection is correct. However the connected lines are from different line pairs. Line pair crosstalk will cause an over large crosstalk, otherwise network speed will be slow.



Connection diagram of crosstalk line pair

Crosstalk interface is shown as below:

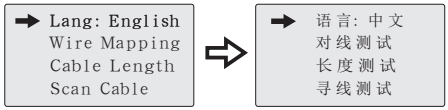


Crosstalk line pair flashes

Note: In case of the non-twisted-pair cable like telephone cable, due to over large crosstalk, it generally shown as crosstalk.

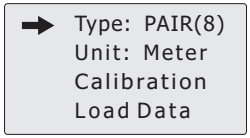
Choose the Language, Chinese or English

then you can get the screen as you desired.



Calibration and setup

After powering the main tester and entering the main test menu, press “UP”, “DOWN” key to move cursor “➔” to “Configure” , and then press “ENTER” key to perform calibration and setup function. The following interface will be shown:



Type selection:

1). Type: twisted-pair cable

When testing network cable, users need to firstly choose”Pair(8)” in”Type” after this, users can test cable length and check its wiremap.

2). Type: telephone cable

When testing telephone cable, users need to firstly choose”Tel(6)” in”Type” after this, users can test cable length and check its wiremap.

3).Type: USB cable

When testing USB cable, users need to firstly choose"USB(4)" in"Type" after this, users can test cable length and check its wiremap.

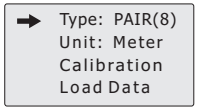
4). Type: BNC coaxial cable

When testing BNC cable, users need to firstly choose"BNC(2)" in"Type" after this, users can test cable length and check its wiremap.

Unit setup:

Set unit: meter

When moving cursor " ➡ " to "Unit" item, press "ENTER" key till unit of meter is shown. Move the cursor " ➡ " to "Return" item, press "ENTER" key to return to the main menu. The following interface will be shown:

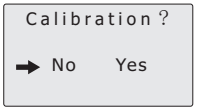


Note: Setup of the unit of inch and yard is just the same as that of meter.

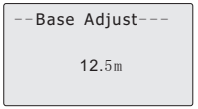
Calibration function:

Due to different materials of the cables, calibration is required before testing the cables. The function of calibration is for accurately measuring length of the cables.

When starting dynamic calibration, insert the same type of cables at a specified length into "M" port. It is unnecessary to insert into remote unit.



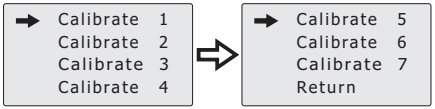
Select "Yes", and then press "ENTER" key, the measured length will be shown: At this time, press "UP" or "DOWN" key to adjust to show the actual length as below:



When length is given, press "ENTER" key to save the calibration value. The screen will show calibration 1, cablriation 2...calibration 7. Users can choose it from "Data load", which can avoid more calibration next time.

Data loading:

Choose the functions of "Load data", it will show 7 sets of length values which were stored before. Select the desired one and then start to test the cable length.



Auto power-off :

Choose the time for power off according to your own requirement.

Packing list

1. Emitter	1PCS	6. RJ45 Adaptor cable	1PCS
2. Receiver	1PCS	7. Alligator clip adaptor	1PCS
3. Remote adapter	1PCS	8. User manual	1PCS
4. Earphone	1PCS	9. Kit	1PCS
5. RJ11 Adaptor cable	1PCS	10. Color box	1PCS

Note:

(1). NF-868A can't trace cable.

(2). NF-868W includes 8 remote units with ID1-ID8.

Diagram of series products

NF-306

NF-838

NF-8208

NF-268

NF-806R

NF-816

NF-468L

NF-3468

NF8108-M

NF-388

NF-903

NF-906A